II. SOURCES AND METHODS[1]

The state and county estimates of personal income are designed to be conceptually and statistically consistent with the national estimates of personal income; county estimates sum to state totals which, in turn, sum to national totals.[2] As a result, the definitions that are used for the components of personal income for the state and county estimates are essentially the same as those used for the national estimates.[3]

Personal income is defined as the income received by, or on behalf of, all the residents of an area (nation, state, or county) from all sources. It consists of the income received by persons from participation in production, government and business transfer payments to persons, and government interest payments to persons. Personal income is the sum of wage and salary disbursements, supplements to wages and salaries, proprietors' income, dividends, interest, and rent, and personal current transfer receipts, less contributions for government social insurance.

Persons consists of individuals, nonprofit institutions that serve individuals, private noninsured welfare funds, and private trust funds. The last three categories are referred to as "quasi-individuals." The state- and county-level source data used to estimate some components of personal income typically omit the income received by quasi-individuals. It is therefore necessary to allocate national estimates of their income to states and counties.

Per capita personal income is calculated as the personal income of the residents of an area (nation, state, or county) divided by the area's population as of July 1.

Disposable personal income (estimated for the nation and for states) is the income that is available to persons for spending and saving. It is calculated as personal income less the sum of personal current taxes paid to Federal, state, and local governments. State per capita disposable personal income is

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[1] For information about the methodology used to prepare the estimates for earlier years, call (202) 606-5360, or e-mail reis.remd@bea.gov.

[2] At the national level, personal income is part of the personal income and outlay account, one of seven summary accounts that compose the national income and product accounts. Of the aggregations in the personal income and outlay account, only personal income, disposable personal income, and personal current tax receipts are estimated for states, and only personal income for counties. In addition, BEA prepares estimates of gross state product (GSP), which correspond to gross domestic product (GDP). With one minor qualification, GSP and state personal income share the following elements of personal income: Compensation, proprietors' income, and rental income of persons. The measure of compensation used in GSP is based on wage and salary *accruals* while personal income is based on wage and salary *disbursements*. The difference between accruals and disbursements is typically very small (see NIPA Table 1.7.5, Line 23). For further information about the relationships among GDP, GSP, and state personal income, see Gerard P. Aman, George K. Downey, and Sharon D. Panek, "Comprehensive Revision of Gross State Product: Accelerated Estimates for 2003: Revised Estimates for 1977-2002," *Survey of Current Business* 85 (January 2005):80-106.

[3] The national estimates may temporarily differ from the state estimates because of different estimating schedules. The state estimates of wages and salaries and farm proprietors' income incorporate source data that are not available when the national estimates are prepared; these data are later incorporated into the national estimates when they are revised.

calculated as the disposable personal income of the residents of a state divided by the state's population as of July 1.

Differences in geographic scope and in classifications between the national and state and county estimates

The main differences between the national estimate of personal income and the state and county estimates stem from the treatment of the income of U.S. residents who are working abroad and the income of foreign residents who are working in the United States. The state estimates of wage and salary disbursements and supplements to wages and salaries represent mainly the wages and supplements earned by persons who live in the United States and so includes the wages and supplements earned by foreign residents working in this country.

The national estimate of personal income is broader. It includes the wages and supplements of Federal civilian and military personnel stationed abroad, other U.S. residents on foreign assignment for less than a year, and the investment income (dividends and interest) received by Federal retirement plans of Federal workers stationed abroad. Wages and supplements of foreign residents are included only if they live and work in the United States for a year or more.

The wages and salaries of U.S. residents who commute to work in Canada and Canadian and Mexican residents who commute to work in the United States are recorded in the rest-of-the-world sector in the national estimates. In the state and county estimates these wages and salaries are part of the residence adjustment.[4]

The wages and salaries of U.S. residents who are employed by international organizations and by foreign embassies and consulates in the United States are classified in the rest-of-the-world sector in the national estimates. In the state and county estimates they are classified in an "industry" called "other." In published estimates this industry is typically combined with forestry, fishing, and related activities.

The wages and salaries of (1) U.S. residents, other than federal personnel, working temporarily (for 1 year or less) abroad, (2) foreign residents working temporarily in the U.S., and (3) foreign students enrolled in U.S. colleges and universities are recorded in the rest-of-the-world sector in the national estimates.

In the state estimates the wages and salaries of foreign residents and foreign students working in the U.S. are recorded in the industry of employment. The wages and salaries of U.S. residents working temporarily abroad are omitted from the state estimates.

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[4] The residence adjustment is mainly an estimate of the net flow of labor earnings of intercounty commuters. The state and county estimates of wages by place of work, like the national estimates of wages for domestic industries, exclude the wages of the U.S.-resident border workers and include the wages of the foreign-resident border workers.

The national estimate of personal current transfer receipts, unlike the state and county estimates, also includes the unemployment benefits that are paid by state employment security agencies to individuals who live in outlying U.S. areas, mainly in Puerto Rico. The state and county estimates are adjusted to remove these payments.

State and local estimates of military wages and salaries for 2001-2003 do not show a large decrease for troops sent to Afghanistan and Iraq. The Department of Defense continues to report active duty regular military strength according to the troops' home bases and reserve strength according to the state of the reservists' bases. This is different from how the Defense Department reported troop strength in the Persian Gulf War of 1991. In that conflict, Army troops that were deployed to the Persian Gulf were reported by the Defense Department as overseas. As a result, the counties housing bases that had troops deployed for the Persian Gulf War showed a corresponding drop in strength at the base. The Navy, however, reported no change in strength at its ports because they did not change the home port of the various ships that were sent to the Persian Gulf. Their view was that the ships were temporarily at sea. The Air Force only sent small groups from a large number of bases overseas. In some cases, long range aircraft stationed in the United States were being flown round trip to the Middle East on bombing missions. The call up of reservists for this war was not large and was for a relatively short time.

Sources of the data

The state and county estimates of personal income are primarily based on administrative-records data, census data and survey data.

The data from administrative records may originate either from the recipients of the income or from the source of the income. These data are a byproduct of the administration of various Federal and state government programs. The most important sources of these data are: The state unemployment insurance programs of the Bureau of Labor Statistics,[5] U.S. Department of Labor; the social insurance programs of the Centers for Medicare and Medicaid Services (CMS, formerly the Health Care Financing Administration), U.S. Department of Health and Human Services, and the Social Security Administration; the Federal income tax program of the Internal Revenue Service, U.S. Department of the Treasury; the veterans benefit programs of the U.S. Department of Veterans Affairs; and the military payroll systems of the U.S. Department of Defense.

The data from censuses are mainly collected from the recipients of the income. The most important sources of census data for the state and county estimates are the census of agriculture, which is conducted by the U.S. Department of Agriculture (USDA), and the census of population and housing, which is conducted by the Bureau of the Census, U.S. Department of Commerce.

[5] The data from the state unemployment insurance programs are collected by the various state employment security agencies and are assembled and supplied to BEA by the U.S. Bureau of Labor Statistics.

Some of the estimates are based on data from other sources. For example, the USDA's national and state estimates of the income of all farms constitute the principal basis for BEA's national and state estimates of farm proprietors' income. The USDA uses sample surveys, along with census data and administrative-records data, to derive its estimates.

Using administrative records data and Census data to measure income as defined in the national income and product accounts has both advantages and disadvantages. By using these data, BEA can prepare detailed annual estimates of personal income for the nation, states, and counties at a relatively low cost and without increasing the reporting burden on businesses and households. However, because the source data often do not precisely match the concept being estimated, they must be adjusted to compensate for differences in definitions, in coverage, and in geographic detail.

Geographic characteristics of the source data

Personal income, by definition, is a measure of the income received by persons, and the estimates of state and county personal income should reflect the residence of the income recipients. However, some of the source data that are used to prepare the estimates of personal income are reported and recorded by the recipient's place of work rather than by the recipient's place of residence. As a result, the estimates of the components that are derived from the place-of-work data are adjusted to a place-of-residence basis, and the estimates of these components are presented both by place of work and by place of residence.

The estimates of wages and salaries, supplements to wages and salaries, and contributions for government social insurance (by employers and employees) are mainly derived from source data that are reported and recorded by place of work. These data are reported by industry in the state and county in which the employing establishment is located.

The estimates of nonfarm proprietors' income and contributions for government social insurance (by the self-employed) are derived from source data that are reported by the tax-filing address of the recipient. This address is usually that of the proprietor's residence; therefore, these data are assumed to be recorded by place of residence.

The estimates of farm proprietors' income are derived from source data that are reported and recorded by the principal place of production, which is usually the county in which the farm has most of its land and in which most of the work is performed. Because most farm proprietors live on, or near, their land, the place of residence is assumed to be the same as the place of work.

The estimates of rental income of persons, personal dividend income, personal interest income, personal current transfer receipts, and contributions for supplementary medical insurance and for veterans life insurance are derived from source data that are reported and recorded by the place of residence of the income recipient.

Allocation procedures

Allocation procedures impart to the state (or county) estimates the characteristics of the national (or state) estimates that are not reflected in the available state-level (or county-level) source data; for most components of personal income, the state and county source data are less comprehensive and less reliable than the data that are available for the national estimates.[6] In addition, these procedures allow the use of state and county data that are related to, but that do not precisely match, the component being estimated. For example, state control totals of unemployment compensation are allocated to counties of some states in proportion to direct payments data provided their employment security agencies. For the states not providing such data, the control totals are allocated in proportion to the number of unemployed persons estimated by the Bureau of Labor Statistics.

Before allocating a national estimate of some component of personal income it is adjusted for any definitional or classificatory differences from the state estimates. The adjusted national estimates are used as “control totals” for the state estimates.

In the allocation procedures, the national or state control total for a component is allocated to states or counties in proportion to each state’s or county’s share of related data. In many cases the related data are modified or augmented before the allocation by preliminary estimation—for example, by the summation of wages, tips, and pay-in-kind, by the multiplication of wages and the number of employees, or by interpolation or extrapolation.

Because the allocation procedures use the national control totals for the state estimates, and state control totals for county estimates, their use yields an additive system in which the county estimates sum to the state estimates which in turn sum to the national estimate.

The allocation procedure used to estimate a component of state personal income is

$$Y_s = (Y_n)\left(\frac{X_s}{X_n}\right)$$

where Y_s is the estimator (that is, the statistical procedure used to derive an estimate) of the component of personal income for state s, Y_n is the national estimate of the component (which is used as the control total for the state estimates of the component), X_s is the value for state s from the data related to the component, and X_n is the sum over all states of the related data ($X_n = \sum_s X_s$).

[6] However, the national estimates of most components of wages and salaries and personal current transfer receipts, which together account for about 70 percent of personal income, are based mainly on the sum of source data that are available by state. Therefore, the use of the allocation procedures to prepare the state estimates of these components results in estimates that do not differ greatly from the source data.

In cases in which the national estimate is calculated as the sum of the state data plus an amount A_n for which state data are unavailable, the allocation procedure may be represented by two equations:

$$A_s = (A_n)\left(\frac{X_s}{X_n}\right)$$

$$Y_s = X_s + A_s$$

where A_s is the state estimator of the portion of Y for which state data are unavailable. In effect, Y_s is the composite estimator consisting of X_s, the best possible direct estimator (100 percent sample) of the portion of Y for which state data are available, plus A_s, the indirect estimator of the portion of Y for which state data are unavailable.

For example, the national estimates of wages and salaries for many industries consist of the sum of state data plus a few small adjustments, which taken together (A_n) are allocated to the states in proportion to the state data. The small allocated amount for each state (A_s) is added to the state datum (X_s) to yield the state estimate (Y_s).

Interpolation and extrapolation procedures

Some of the data that are used to estimate components of state and county personal income are available or adequate only in certain years, which are called benchmark years.

Interpolation procedures are used in the derivation of the estimates for the years between two benchmark years. Extrapolation procedures are used in the derivation of the estimates for the years after the most recent benchmark year.

For the details of these procedures, see the “Technical Notes.”